Patent Claims:

1. Composite powder with a matrix domain structure, characterised in that

   - the matrix is a metal oxide and is present in the form of three-dimensional aggregates that have at least in one dimension a diameter of not more than 250 nm,
   - the domains consist of metal oxides and/or noble metals in the matrix of an individual metal oxide, wherein the domains consist of
     - at least two metal oxides or
     - at least two noble metals or
     - a mixture of at least one metal oxide and at least one noble metal, and
     - are nanoscale, and in which
   - the composite powder has a volume-specific surface of 60 to 1200 m^2/cm^3.

2. Composite powder with a matrix domain structure according to claim 1, characterised in that an individual domain contains one or more metal oxides and/or noble metals.

3. Composite powder with a matrix domain structure according to claim 1 or 2, characterised in that the matrix and the domains are present in an amorphous or crystalline form.

4. Composite powder with a matrix domain structure according to claims 1 to 3, characterised in that the domains are enclosed by the matrix.

5. Composite powder with a matrix domain structure according to claims 1 to 4, characterised in that the ratio, referred to the weight, of the sum total of the domains to the matrix is between 1:99 and 90:10.

6. Composite powder with a matrix domain structure according to claims 1 to 5, characterised in that the oxides of the matrix and of the domains comprise the oxides of Li, Na, K, Rb, Cs, Be, Mg, Ca, Sr, Ba, Sc, Y, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Ti, Zr, Hf, V, Nb, Ta, Cr, Mo, W, Mn, Fe, Co, Ni, Cu, Ag, Zn, Cd, Hg, B, Al, Ga, In, Te, Se, Tl, Si, Ge, Sn, Pb, P, As, Sb or Bi.

7. Composite powder with a matrix domain structure according to claims 1 to 6, characterised in that the domains comprise the noble metals Au, Pt, Rh, Pd, Ru, Ir, Ag, Hg, Os or Re.

8. Composite powder with a matrix domain structure according to claim 1, characterised in that

- the matrix is of silicon dioxide and
- the domains consist of indium oxide, tin oxide and/or mixed metal oxide forms of indium and tin,
- wherein the proportion of indium oxide, calculated as In_2O_3 and referred to the sum total of indium oxide and tin oxide, calculated as SnO_2, is from 80 to 98 wt.%, and

- the proportion of silicon dioxide, referred to the sum total of silicon dioxide + indium oxide + tin oxide, is 10 to 99 wt.%.

9. Composite powder with a matrix domain structure according to claim 1, characterised in that
- the matrix is of silicon dioxide and
- the domains consist of manganese oxide, iron oxide and/or mixed metal oxide forms of iron/manganese,
- wherein the proportion of iron oxide, calculated as Fe_2O_3 and referred to the sum total of iron oxide and manganese oxide, calculated as MnO, is 36 to 99 wt.%, and
- the proportion of silicon dioxide, referred to the sum total of silicon dioxide + iron oxide + manganese oxide, is 10 to 99 wt.%.

10. Composite powder with a matrix domain structure according to claim 1, characterised in that
- the matrix is silicon dioxide,
- the domains consist of manganese oxide, iron oxide, zinc oxide and/or mixed metal oxide forms of iron/manganese or iron/zinc or manganese/zinc,
- with a proportion of
iron oxide, calculated as Fe_2O_3, of 32 to 98 wt.%,
manganese oxide, calculated as MnO, of 1 to 64 wt.%,
zinc oxide, calculated as ZnO, of 1 to 67 wt.%,
in each case referred to the sum total of iron oxide, manganese oxide and zinc oxide, and

- the proportion of silicon dioxide, referred to the sum total of silicon dioxide + iron oxide + manganese oxide + zinc oxide, is 10 to 99 wt.%.

11. Composite powder with a matrix domain structure according to claims 1 to 10, characterised in that the domains have a mixed metal oxide structure in a proportion of at least 80%.

12. Process for the production of the composite powder according to claims 1 to 11, characterised in that the precursors of the oxides of the matrix and of the domains are mixed, corresponding to the subsequently desired ratio of the metal oxides, with a gas mixture containing a combustible gas and oxygen and are reacted in a reactor consisting of a combustion zone and a reaction zone, and the hot gases and the solid product are cooled and then separated from the gases.

13. Process according to claim 12, characterised in that after the separation of the gases the product undergoes for purposes of purification a heat treatment by means of gases moistened with water vapour.

14. Process according to claim 12 or 13, characterised in that the precursors are added in the form of aerosols and/or as vapour to the reactor.

15. Process according to claim 14, characterised in that the aerosols of the precursors are produced separately or jointly.

16. Process according to claim 15, characterised in that the aerosols of the precursors are obtained from liquids, dispersions, emulsions and/or pulverulent solids in a gaseous atmosphere.

17. Process according to claim 15 or 16, characterised in that the aerosols are produced by ultrasound nebulisation or by means of single-product or multi-product nozzles.

18. Process according to claim 14, characterised in that the vapours of the precursors are produced separately or jointly.

19. Process according to claims 12 to 18, characterised in that the aerosols and/or vapours are additionally added at one or more points to the reactor.

20. Process according to claims 12 to 19, characterised in that the precursors are halides, nitrates, organometallic compounds and/or the metal powders of Li, Na, K, Rb, Cs, Be, Mg, Ca, Sr, Ba, Sc, Y, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Ti, Zr, Hf, V, Nb, Ta, Cr, Mo, W, Mn, Fe, Co, Ni, Cu, Ag, Zn, Cd, Hg, B, Al, Ga, In, Te, Se, Tl, Si, Ge, Sn, Pb, P, As, Sb, Bi, Au, Pt, Rh, Pd, Ru, Ir, Hg, Os or Re.

21. Process according to claims 12 to 20, characterised in that the product is treated in a reducing atmosphere before or after the purification.

22. Use of the composite powder according to claims 1 to 11 for the production of ceramics, as material for magnetic, electronic or optical applications, in data storage media, as contrast agent in imaging processes, for polishing glass and metal surfaces, as catalyst or catalyst carrier, as function-imparting filler, as thickening agent, as flow auxiliary, as dispersion aid, as ferrofluid, as pigment or as coating material.